REMARKS

In the Office Action mailed 11 July 2005, claims 1-11, all claims pending in the above-captioned U.S. patent application, were rejected. Applicants have carefully considered the Office Action and submit the amendments above and the remarks to follow as a full and complete response.

Applicants have amended claims 1, 3, 5, 6, 8, 10 and 11. Claims 1-11 are submitted for reconsideration as amended.

Applicants have amended claims 1, 5 and 10 to specify that the low water content which characterizes the polar aprotic solvent in which the inventive process takes place is one having "below about 0.1 wt %" water. Support and explanation for this amendment may be found at paragraph [0018] of the specification.

All other amendments have been made for clarity of expression and do not affect scope or intent of the claims.

Applicants' invention resides in the discovery that under certain conditions it is possible to render an oxide of a valve metal conductive. Under these conditions, the oxide behaves as an electrode, and electro-chemical processes such a polymerzations and platings can be effected. Subsequently, and under "normal" conditions, the dielectric properties of the oxide are restored.

When manufacturing electronic devices and especially valve metal capacitors, this ambivalent character of the oxide that has been discovered by applicants can be very useful. For example, intrinsically conductive polymers such as poly (pyrrole), poly (thiophene) and poly (aniline) can be prepared by oxidative chemical polymerization or electrochemical polymerization. The properties of the product formed electrochemically are preferred in capacitors but many processes must use an oxidative chemical polymerization step to first form an electrode. Then an electrochemical polymerization can be performed using the first polymer

as an electrode. Use of the inventive process avoids the extra steps (and extra chemically distinct layer).

Claims 1 and 2 had been rejected as anticipated by U.S. Patent No. 6,274,061 to Tamamitsu. Specifically, the reference is cited for the use of "a low water content polar solvent" and col. 4, lines 17-22 and col. 5, lines 51-61 are cited in support thereof. The citations are in error because the shopping list of solvent systems never specifies any dryness and includes numerous highly hygroscopic liquids and solids (ethanol, ethylene glycol, HMPA- also a known carcinogen- and conjugate bases of carboxylic acids). As if to emphasize the wetness of the electrolyte, the reference ADDS 6% WATER to the electrolyte (col. 13, lines 44 through col. 14, line 7).

Properly construed, the reference does not anticipate applicants' invention but constitutes a distinct teaching away from the instant invention.

Claims 3 and 4 had been rejected as obvious over a combination of the Tamamitsu reference in view of U.S. Patent No. 4,812,951 to Melody et al.

The deficiencies of the primary reference have been elucidated *supra*. The secondary reference fails to heal the enumerated deficiencies by likewise teaching away from extreme dryness of the electrolyte. At col. 5, lines 38-45, it is stated that "some water was present in all of the solvents initially..." By contrast, water must be excluded from the components of the instant invention to avoid slushing or freezing at temperatures in the range of –40°C to –60°C, as well as poisoning the reaction.

Claims 5-7 are directed to a second embodiment of the invention wherein the conductive oxide made by the methods of claims 1-4 is used as an electrode upon which to lay down an intrinsically conductive polymer by electrochemical deposition.

Claims 5-7 had been rejected as obvious over the combinations of the Tamamitsu reference in view of U.S. Patent No. 4,948,685 to Ohsawa et al. Col. 6, lines 52-61 of Ohsawa are cited as support for the rejection. In fact, the cited excerpt teaches that the oxide is a hindrance and that a "clean" Al surface is preferred. It is for this reason that the Al surface is roughened (col. 11 lines 63) to get a "clean" surface (see also examples 1-1 and 1-2). The claims are specific also on the use of a roughened surface.

The teaching of the secondary reference is that the oxide is a dielectric and hindrance to polymerization whereas the claimed invention employs the oxide, under specified conditions, as a working electrode. The teachings are divergent.

Claims 8 and 9 had been rejected as obvious over the above-cited references applying the same erroneous understandings refuted *supra* and further explanation is seemed to be redundant.

Claims 10 and 11 had be rejected as obvious over the combination of Tamamitsu and Hesse et al., US 2003/0098240. The deficiencies of the primary reference are of record.

The secondary reference is directed to a new method for forming anodized, colored Al products. The metallized color is formed within the oxide, not as a separate conductive layer per the instant invention. Water is not excluded (see [0067]). Note for example, the use of oxalic acid in claim 6. This aggressive acid almost inevitably carriers water of hydration and cannot be used in applicants' method.

All rejections are premised on an interpretation of the primary reference to include an unstated requirement of nearly complete dryness. Nothing in the specification of the reference teaches a step of drying, what are for the most part, inherently wet liquids. Furthermore, the reference teaches at col. 14, line 1, that the ADDITION OF WATER IS GOOD. Applicants' invention abhors the presence of water and is dysfunctional in its presence.

In view of the amendments and remarks above, applicants submit that the application is in condition for allowance and request reconsideration and favorable action thereon.

Respectfully Submitted,

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Date: Oct. 10 2005 by: Jacqueline Beavers